

The *third* was also of four months' standing, in a healthy young man; cured by four perforations.

The *fourth* case was of five months' standing, in a healthy man aged 36 years. Cured in four weeks by one operation.

3. *Tibia*.—The *first* of these was of four months' standing, in a man cured in two weeks by one perforation.

The *second* was in a man 25 years of age, of good constitution; cured in five weeks by four perforations.

The *third* was of seven months' standing, in a man of good constitution, 21 years of age; cured in four weeks by four perforations.

4. *Ulna*.—The *first* of these was in a labourer, and was of three months' standing. Cured in 22 days by two perforations.

The *second* in a man 35 years of age, a drunkard, of 18 weeks' standing; cured in four weeks by two perforations.

In none of the above cases, Dr. B. states, did any serious accident occur. "In one," he observes, "a small abscess, and in another, a subject of bad constitution, some swelling, resembling erysipelas, which, however, soon subsided. These were the most serious results of about sixty perforations. We may therefore assert, with great certainty, that this operation, unless performed upon patients in a condition unfit for any operation, is entirely safe.

It will also be noticed, that, while in cases of fracture of the tibia, where apposition is perfect and the movement slight, a single perforation speedily induced union in a few days; on the other hand, fractures of the humerus and of the femur did not, in most cases, require less than four operations, nor unite in less than four weeks, while one required five months and eleven perforations to effect a cure, and another did not unite at all.

My practice at present is to commence the treatment by two or three perforations of the bone through a single opening of the skin, using an instrument of small size, repeating this every ten days or two weeks, gradually increasing the size of the instrument and the extent of the wound of the bone, until tenderness and some swelling are induced. I have very uniformly found that when pain and throbbing are felt in the seat of fracture, union has commenced.

"*Direction of the Perforator*.—That point and direction of puncture should be chosen which affords the easiest access to the bony surfaces with least exposure of vessels. In many cases of oblique fracture, traversing the bones answers well. In others, as of the tibia, I have found that following the direction of fracture is best. In others, still, when the ends are not perfectly in contact, I make a perforation between, and direct the instrument first in one direction, then in the other; while in others, still, the instrument can be passed most readily between the bones and attack them at the side.

"*Size of the Instrument*.—In cases of ununited fracture of the tibia, or radius and ulna, where the ends are in contact and the wounds slight, I use a perforator no more than two or three millimetres in breadth; while, in old cases, situated in the femur and humerus, and when there is great mobility, it is as well to use an instrument one-eighth of an inch and over in breadth. In such cases, very extensive wounding and perfect denudation is required. It was not found that the bones had in any case lost their natural feeling of density.

"*Causes of Want of Union*.—In all the above cases, the causes of non-union were imperfect apposition, or a dressing admitting of too great mobility, or accidents producing displacements, or indolence of the patient. In three of the cases, the fragments were separated from each other by a sensible space, as shown by the instrument in perforating them. It is especially to be noticed, that the most efficient means for securing immobility were in every case conjoined with the treatment by perforation. These means were such as are generally known and used."

A case of ununited fracture of the forearm, treated unsuccessfully by this method, will be found in the original department of this number. (p. 136-141.)

*Dislocation of the Fourth and Fifth Cervical Vertebrae*.—Dr. W. M. RYER records (*Pacific Med. & Surg. Journ.*, Sept. 1858) a case of this rare accident. The subject of it was a girl 7 years of age, of lymphatic constitution, the daugh-

ter of Dr. Hepburn, of Mokelumne Hill. When seen by Dr. R., the patient's head "was most singularly and immovably fixed, much bent to the side, the ear approximating but little in advance of the right shoulder, and in a position no child in a normal condition could for a moment assume; the slightest motion tending to change the relative position of the head and body producing intense pain.

"The father, Dr. Hepburn, an aged and very intelligent practitioner of medicine, had watched the child with a parent's solicitude for the six previous days and nights, and neither during sleeping or waking did the child move its head from the position it had assumed from the instant of the accident. As the right clavicle was fractured at the time, the Doctor was inclined at first to believe the child was favouring the fracture and was unwilling to entertain the unpleasant thought of so serious a complication as luxation of the spine.

"The child had fallen six days previous to my visit, from a high bed, and is supposed to have struck the back and left side of her head. The father saw her within a half minute after, and found her head and neck distorted precisely as at the time of my examination; there had been no change for six days. Such distortion, I believed, must have arisen from muscular contraction or bony displacement. We examined every muscle whose contraction would be likely to produce the deformity, and found them loose, soft, uncontracted. Upon tracing the spinous processes from below to the articulation of the fourth and fifth cervical vertebrae we found them form, at this point, an obtuse angle, and depart from the natural direction about 40 degrees. The intellectual faculties were good, and sensation and motion not greatly impaired. I could form no other diagnosis than was formed by the medical gentlemen in attendance previous to my visit. It was clearly a dislocation of the left oblique articulating process—the process of the fourth riding over the upper margin of the one with which it was articulated below.

"As objections were made to the administration of chloroform, we attempted the reduction without it, and failed. We then administered this anæsthetic and succeeded to our fullest anticipations, Dr. Soher, and other gentlemen who assisted; distinctly recognizing the instant of time when the reduction was effected. The child immediately had full motion of her head and neck, and is now entirely recovered."

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*Changes of the Blood-Cells in the Spleen.*—The opinions of physiologists as to the functions of the spleen have been various. Some, as Funke, Hewson, Bennet, &c., believe it to be a generator of blood-cells, while Kölliker and others maintain that it is a destroyer of them. Dr. HENRY DRAPER relates (*N. Y. Journ. Med.*, Sept. 1858) some microscopic investigations made by him on the blood of frogs taken from the splenic artery and splenic vein, and he found the latter to contain at least double the general average of imperfect cells; whence he infers that "the spleen must be an organ for the disintegration of blood-cells."

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*The Extent to which Ether should be used in Midwifery.*—In a discussion on this subject at a late meeting of the Norfolk District Med. Soc. (Mass.), Dr. CORRING of Roxbury, gave the following as the result of his experience:—

"In our own individual experience in several hundred cases of normal labour, we have been led to observe—that only a very few patients were capable of taking just that amount which would deaden the acuteness of the suffering without at the same time diminishing the frequency and effectiveness of the uterine contractions—that generally, as suspension of consciousness approached, there was a marked and proportionally complete suspension of the expulsive efforts—that, with the greatest care possible under the circumstances, there was frequently more or less irritation of the air-passages; often troublesome coughing; sometimes nausea and vomiting, attributable directly to the anæsthetic; also, occasionally strong tendencies to hysterical manifestations, which sometimes continued after the labor was over; with other minor inconveniences, such as unwonted impatience, jactitation, &c. &c.; so, also, instances, not a few, of subsequent retention of urine; as well as post-partum hemorrhage from imperfect uterine contraction, apparently due to the same agent—that, although something was apparently